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memories of the young birds, and help to mould their song when they come to maturity. They noticed the father's song every time before he came in sight.

The male grosbeak is certainly most devoted and cheerful about his domestic duties. He sings to his mate all through the period of incubation, sings while feeding the young and during the anxious time of their first flights, and I have even seen him sitting upon the eggs and singing merrily.

Another reason why I think that the same pair returns to the same nesting site in successive years is that in several cases I have found nests of different years in the same small tree. In one manzanita bush, about ten feet high, were three nests, one almost fallen to pieces, one of last year, and a fresh nest with a bird on it. It may be argued that a second bird chose the site because it was eminently suitable; but where there are so many shrubs all alike, I do not think one can be considered more suitable than another. A more likely suggestion is that the young birds might return another year to the neighborhood of the nest in which they were reared. Further observations on the plumage of the birds would settle this point as it takes several years for a male grosbeak to attain his full beauty of plumage.

Destruction of Birds by Wires

BY W. OTTO EMERSON

IF one does not happen to live where he can observe the disastrous effect upon bird life of numerous telephone, telegraph and electric power wires, which are strung along our highways, across lines of migration or favorite paths to feeding grounds, he would be surprised at the number of our shore birds destroyed annually. Within the past few years several instances have come under my observation which seem worthy of record.

The first case was noted September 8, 1898, in connection with the telephone line which, passing over the salt marshes, joins Haywards with a landing on the bay shore, some four miles west. Only two wires are used, which are attached to fourteen foot poles set some twenty feet out in the Salicornia to the right of the roadway. Beyond this, on both sides of the road, the marshes are cut up for miles into a series of checker-board ponds for salt water evaporating purposes. In August, September and October these ponds are a mass of glittering white—more or less as the water has been run off. Small shore waders come by the thousands to feed upon the mass of larvæ which collect about the edges of the ponds. On the date mentioned I drove over the road for the first time to find what fall migrants had returned. On picking up eight or ten dead sandpipers from the road, I was at first unable to make out what had killed them. I then noticed a fluttering bird out in the marsh in line of the phone wires, and found it to be a phalarope with a broken wing. This revealed the secret. I soon observed a flock go by from one pond to another but saw none of them strike the wire that trip, but later saw several individuals knocked out of a flock of sandpipers. I picked up forty dead birds that lay along the road and about the marsh. Some were under the wires while others would be flung off ten or twenty feet by the impact of hitting a

wire, in rapid flight. A little farther on I found a bird hanging by the wing and another by the neck to the wire. Most of those picked up were found to be cut across the front of the head or breast. Some were cut into the flesh deeply; a few were beheaded.

I made the next day another trip over the road and found the remains of thirty odd birds mostly *Phalaropus lobatus* and *Ereunetes occidentalis*. Quite a number of *Tringa pacifica* and *T. minutilla* were among those found on my first visit.

As I watched the flocks when they came in from the bay, or flew from one set of ponds to another, it was observed that their line of flight would just be in range to hit either of the two wires. Coming with such a zig-zag and rapid flight they were not able to see the two wires in time to dip or rise in order to avoid being caught by the trap. If one of the foremost birds of the flock struck the wire and fell, the rest would turn their course somewhat; more from seeing their falling companion, I think, than from being able to distinguish at the speed they were going, the real cause of the disaster.

On my last visit in this direction, May 11, 1903, I found five *Phalaropus lobatus* in full spring plumage, several *Tringa minutilla*, *T. pacifica*, and *Ereunetes occidentalis*. Larger birds than these would not be so liable to come in contact with the wires, flying as they do considerably slower and higher in the air.

This destruction of shore birds goes on night and day the year round. I asked some of the salt-pond owners if they noticed birds flying against the wires. They said some mornings after the spring or fall flights, they had seen dozens lying along the road. Cats from warehouses and dwellings had learned the convenient larder and had grown fat, while Japanese and Italian workmen imitated the cats.

Mr. F. H. Hollins of San José mentioned to me some years ago that he had picked up two or three dozen phalaropes one morning (Nov. 1898) along the main thoroughfare, five miles east of the salt marsh. They lay under the wires and he thought they must have been killed during the night flight.

Mr. Clark P. Streater picked up on the main business street of Santa Cruz, California, in September, 1903, a black rail, *Porzana jamaicensis*, killed by overhead wires.

On June 29, 1903, Prof. F. E. L. Beal and myself found one of the oddest tangles into which a bird ever managed to get itself. It was a great horned owl, on one of the canyon ranches, and was wound up in a barbed wire fence. He was hanging by the wing, wound several times around the wires, so that it was impossible to extricate him. The fence had only two wires, and led down a slope into the upper end of a gully or canyon. Some of the sandy hill had slid down leaving the wire with several posts swinging free, some six or eight feet in air, for a distance of several hundred yards. No doubt the owl, intent upon some prospective midnight lunch, as he flew along down the gulch, came in contact with the top wire. This, having caught his fluffy feathers, naturally wound Bubo tight in its barbs. The legs were badly cut by the struggle for freedom which was further evidenced by the feathers about the neck. He had evidently used his beak as well as feet. In this age of barbed wire there are more ways than one by which an animal may come to an untimely end.